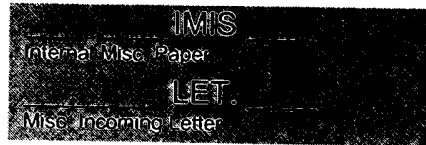




A DOCPHOENIX

APPL PARTS



371P

PCT Papers in a 371 Application

A...

Amendment Including Elections

ABST

Abstract

ADS

Application Data Sheet

AF/D

Affidavit or Exhibit Received

APPENDIX

Appendix

ARTIFACT

Artifact

BIB

Bib Data Sheet

CLM

Claim

COMPUTER

Computer Program Listing

CRFL

All CRF Papers for Backfile

DIST

Terminal Disclaimer Filed

DRW

Drawings

FOR01

Foreign Reference

FRPR

Foreign Priority Papers

IDS

IDS Including 1449

NPL01

Non-Patent Literature

OATH

Oath or Declaration

PET.

Petition

RETMAIL

Mail Returned by USPS

SEQLIST

Sequence Listing

SPEC

Specification

SPEC NO

Specification Not in English

TRNA

Transmittal New Application

CTNF

Count Non-Final

CTRS

Count Restriction

EXIN

Examiner Interview

M903

DO/EO Acceptance

M905

DO/EO Missing Requirement

NFDR

Formal Drawing Required

NOA

Notice of Allowance

PETDEC

Petition Decision

OUTGOING



1449

Signed 1449

892

892

ABN

Abandonment

APDEC

Board of Appeals Decision

APEA

Examiner Answer

CTAV

Count Advisory Action

CTEQ

Count Ex parte Quayle

CTFR

Count Final Rejection

INCOMING

AP.B

Appeal Brief

C.AD

Change of Address

N/AP

Notice of Appeal

PA..

Change in Power of Attorney

REM

Applicant Remarks in Amendment

XT/

Extension of Time filed separate

BACKFILE DOCUMENT INDEX SHEET

Internal

SRNT

Examiner Search Notes

CLMPTO

PTO Prepared Complete Claim Set

WCLM

Claim Worksheet

WFEE

Fee Worksheet

File Wrapper

FWCLM

File Wrapper Claim

IIFW

File Wrapper Issue Information

SRFW

File Wrapper Search Info

Office Action Summary

Application No.
09/297,570

Applicant(s)
Nygren et al.

Examiner
Joseph Waks

Group Art Unit
2834



☒ Responsive to communication(s) filed on Jun 24, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 13-26 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 13-26 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☒ The drawing(s) filed on Jul 24, 1909 is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☒ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the rotor disposed within the stator and the elongated member as recited in claim 13, the maximum distance between respective elongated members as recited in claim 14, the predetermine distance as recited in claim 15, the slotted elongated member as recited in claim 16, the elongated member including a plurality of small conductors combined into a bundle as recited in claim 17, the fault current control comprising a flexible wire as recited in claim 21 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Specification

2. The specification is objected because in page 4, line 21 it refers to drawing Figure 12 which is not included in the specification.
3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the elongated member of an electrically conducting material as recited in claim 13, and the other elongated members as recited in claim 14.

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Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. **Claims 14-20 and 22** are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Re claims 14 and 15, the claimed features of other elongated members versus the elongated member and the maximum distance between respective elongated member and the other elongated members, the predetermined distance and the predetermined magnitude are not defined in the specification or drawings in such a way as to enable the one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Re claims 16 and 17, the claimed features of the elongated members being slotted to reduce eddy current losses, or the elongated members including a plurality of small conductors combined into a bundle having a cross-sectional area to deflect short-circuits currents arising in the end windings during a fault effect are not defined in the specification or drawings in such a

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way as to enable the one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Re claims 18-20, the recited limitation of the spacer applied between the elongated member and another elongated member conflicts the drawing and specification where Figures 3, 4, 6, 7, and 9 clearly show the spacer 20 or 34 being applied between the high voltage cables 12, and not between the rods or pipes 10 also defined in specification page 2, line 31, and page 3, lines 1-3 as the conducting material (supposedly the elongated member of electrically conducting material). Therefore, one of ordinary skill in the arts would not be able to make and/or use the invention.

Re claim 22, the recited limitation of the fault current control device being configured to mechanically stabilize the set of winding is not described in specification or shown in drawings in such way that one skill in the art will be able to understand the relation between the claimed device comprising the elongated member of electrically conducting material connected to the ground and disposed in the end winding region and the mechanical stability of the windings in this region, in particular that applicants did not provide any criteria for what applicants consider as the mechanically stabilized winding and what configuration of the device provide the required stabilization.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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8. **Claims 14, 15, and 17-20** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 14, lines 2-3, "a maximum distance between respective of the elongated member and the other elongated member" is indefinite since neither the claim or the description provide a clear definition whether the recited distance is between each of the respective elongated members or between the one elongated member and respective ones of the other members, line 4, the term of a maximum distance being "sufficiently small" is a relative term which renders the claim indefinite. The term "sufficiently small" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

In claim 17, line 3, "a cross-sectional area being of sufficient size" is a relative term which renders the claim indefinite. The term "sufficient size" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

In claim 18, line 3, "another elongated member" is ambiguous and indefinite, examiner understands --respective one of said other elongated members--.

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Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. **Claim 26** is rejected under 35 U.S.C. 102(b) as being anticipated by **Nikitin et al.** (US 4,429,244).

Nikitin et al. disclose in Figure 2 invention as claimed a rotating electric machine , in particular a generator for high voltage operation comprising a stator, a set of windings 5 having high-voltage cables 6 (Re column 3, lines 34-36) enclosing an electric field in the set of windings, and means 23 and 24 for controlling a fault current and for conducting the fault current to ground in an end winding region.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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12. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Nikitin et al.** (US 4,429,244) in view of **Anderson et al.** (US 3,670,192).

Nikitin et al. disclose in Figure 2, a rotating electric machine, in particular a generator for high voltage operation comprising a stator, a set of windings 5 having high-voltage cables 6 (Re column 3, lines 34-36) enclosing an electric field in the set of windings, and the windings 5 having an end winding regions with an elongated member of an electrically conductive material. The rotor that is not directly disclosed by **Nikitin et al.** is inherent to the disclosed high voltage generator. However, **Nikitin et al.** fail to disclose a fault current control device including the elongated member of an electrically conductive material connected to ground.

Anderson et al. disclose in Figure 1 a rotating electrical machine having a fault current control device including elongated members 5 of an electrically conductive material connected to ground and disposed in the end winding region (Re. Abstract, line 1) for the purpose of preventing a glow discharge from the coil ends.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the as taught by **Nikitin et al.** and to provide a fault current control device including the elongated member of an electrically conductive material connected to ground and disposed in the end winding region as taught by **Anderson et al.** for the purpose of preventing a glow discharge from the coil ends.

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13. **Claims 14 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nikitin et al. (US 4,429,244)** in view of **Anderson et al. (US 3,670,192)** as applied to claim 13 above and further in view of **Raschbichler et al. (US 4,360,748)**.

The combined rotating electrical machine includes all elements essentially as claimed. However, it fails to disclose a maximum distance between the elongated members being sufficiently small to deflect to ground an arc originated in the end windings.

Raschbichler et al. teach in Figure 1, and in column 2, lines 4-7 and 49-52 elongated members 5 and 6 grounded in multiple points for the purpose of suppressing voltage created in a high voltage cable shield to a predetermined maximum value.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined electric machine and to provide elongated members with multiple ground connections as determined by a maximum permissible voltage created in the cable shield as taught by **Raschbichler et al.** for the purpose of suppressing voltages created in a high voltage cable shield to a predetermined maximum value.

14. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Nikitin et al. (US 4,429,244)** in view of **Anderson et al. (US 3,670,192)** as applied to claim 13 above and further in view of **Auclair (US 5,429,532)**.

The combined rotating electrical machine includes all elements essentially as claimed. However, it fails to disclose a fault control device comprising a flexible wire.

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Auclair teaches in Figure 1-3 and 7, and in column 2, lines 52-54 a cable fault control device comprising a conventional flexible wire 16 or 18 serving as a ground connector.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined electric machine and to provide the fault current control with the conventional flexible wire as taught by **Auclair** for the purpose of allowing a ground connection easy to use in limited space.

15. **Claim 23** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Nikitin et al.** (US 4,429,244) in view of **Anderson et al.** (US 3,670,192) as applied to claim 13 above and further in view of **Elton et al.** (US 5,036,165).

The combined rotating electrical machine teaches all elements essentially as claimed, including the high-voltage flexible cables having a current carrying conductor disposed within an insulating part. However, it fails to disclose the high-voltage flexible cable having a current carrying conductor disposed within an inner layer of material having semiconducting properties, wherein the inner insulating layer being disposed within a solid insulating part disposed within an outer layer of semiconductive material.

Elton et al. teach in Figure 1 a high-voltage flexible cable 100 having a current carrying conductor 102 disposed within an inner layer 104 of material having semiconducting properties, wherein the inner insulating layer 104 being disposed within a solid insulating part 106 disposed within an outer layer of semiconductive material 110 for the purpose of providing a layer in

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intimate contact with insulated windings of an electrical machine, and being in contact with ground to bleed of charges thereof and to minimize the possibility of a corona discharge.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined electric machine and to provide the high-voltage flexible cable having a current carrying conductor disposed within an inner layer of material having semiconducting properties, wherein the inner insulating layer being disposed within a solid insulating part disposed within an outer layer of semiconductive material as taught by **Elton et al.** for the purpose of providing a layer in intimate contact with insulated windings of an electrical machine, and being in contact with ground to bleed of charges thereof and to minimize the possibility of a corona discharge.

16. **Claims 24 and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nikitin et al. (US 4,429,244)** in view of **Anderson et al. (US 3,670,192)** as applied to claim 13 above and further in view of **Simmons et al. (US 4,997,995)**.

The combined rotating electrical machine teaches all elements essentially as claimed including the winding being configured to carry a high-voltage up to 110 kV (Re Nikitin et al., column 1, lines 50-64). However, it fails to disclose the windings being configured to operate an inclusive high voltage range of 400 kV through 800 kV.

Simmons et al. teach in Figure and in column 3, lines 7-14 the structure and method of making an extra- high-voltage flexible cable rated for 400 kV and above with a reduced insulation thickness for the purpose of maintaining an acceptable cable diameter.

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17. It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined electric machine and to provide the high-voltage flexible cable rated for 400 kV and above with a reduced insulation thickness as taught by **Simmons et al.** for the purpose of maintaining an acceptable cable diameter as required for stator winding. It would have been further obvious to one having ordinary skill in the art at the time the invention was made to optimize the insulation thickness as required for 800 kV winding, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Prior Art

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Eton et al. (US 4,853,565), Elton et al. (US 5,066,881), and Fort (US 5,093,598) disclose windings including cables with semi-conducting layers similar to applicant's claimed invention. Nemeni et al. (US 4,430,591) and Flick (US 4,164,672) disclose stator windings for extra-high voltage operation similar to applicant's claimed invention. den Hartog (US 4,887,970) and Gladden, Jr. et al. (US 4,986,761) disclose flexible grounding connectors similar to applicant's claimed invention.

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Communication

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Waks whose telephone number is (703)308-1676 . The examiner can normally be reached on Mondays thru Fridays from 8:00am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez, can be reached on (703) 308-1371. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-5841.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



**JOSEPH WAKS
PATENT EXAMINER
TC-2800**

JW
December 1, 1999